## What is claimed is:

- 1. An intrinsically conducting polymer (ICP) blend obtainable by adding:
  - a mixture of poly (3,5-ethylenedioxythiophene) and poly(4-styrenesulphonate) (i.e. PEDOT/PSS);

to

- b. a copolymer of vinylacetate and ethylene to thereby form the intrinsically conducting polymer (ICP) blend.
- 2. An intrinsically conducting polymer (ICP) blend according to claim 1, wherein the viscosity of the PEDOT/PSS is about 60 to about 100 mPa.s.
- 3. An intrinsically conducting polymer (ICP) blend according to claim 1, wherein the amount of PSS present is in excess of the amount of PEDOT.
- 4. An intrinsically conducting polymer (ICP) according to claim 1, wherein the particle size of the vinylacetate:ethylene mixture is about 0.1 10 microns, 0.1 5 microns, 0.3 3.0 microns or about 0.3 1.2 microns.
- 5. An intrinsically conducting polymer (ICP) according to claim 1, wherein the viscosity of the vinylacetate:ethylene copolymer is about 1,000 40,000 mPa.s, about 1 20,000 mPa.s, about 14,000 mPa.s or about 2,500 mPa.s.

- 6. An intrinsically conducting polymer (ICP) according to claim 1, wherein the vinylacetate:ethylene copolymer mixture is acidic and has a pH of about 2 6, about 3 5 or about 4.25.
- 7. An intrinsically conducting polymer (ICP) according to claim 1, wherein prior to mixing the PEDOT/PSS and the copolymer of vinylacetate and ethylene, the PEDOT/PSS is mixed with an acid such as a carboxylic acid.
- 8. An intrinsically conducting polymer (ICP) according to claim 7, wherein the carboxylic acid is selected from any  $C_1 C_{20}$  carboxylic acid, or combination thereof.
- 9. An intrinsically conducting polymer (ICP) according to claim 1, wherein the ICP formed by mixing the PEDOT/PSS and the copolymer of vinylacetate and ethylene forms a substantially homogenous blend.
- 10. A coated product wherein the coated product comprises a substrate with a coating of an intrinsically conducting polymer (ICP) blend comprising PEDOT/PSS and a copolymer of vinylacetate and ethylene according to claim 1.
- 11. A coated product according to claim 10, wherein the substrate is man made such as cellulose acetate, polypropylene, nylon or a biopolymer produced from renewable resources such as poly-lactic acid, poly-glycollic acid, or any copolymer thereof.

- 12. A coated product according to claim 10, wherein the resistance of a coated part of the coated substrate may be about 0.1 to 500 k-ohm.
- 13. A coated product according to claim 10, wherein the coated substrate is treated with a metal salt solution dissolved in aqueous acid.
- 14. A coated product according to claim 10, wherein the coated substrate is treated with a metal salt solution dissolved in aqueous acid and the aqueous acid is a short chain carboxylic acid such as formic acid.
- 15. A coated product according to claim 10, wherein the coated substrate is treated with a metal salt solution dissolved in aqueous acid and the treated coated substrate is then rinsed successively with water to remove excess salt, followed by ethanol and acetone.
- 16. A coated product according to claim 10, wherein treating the coated substrate with a metal salt solution dissolved in aqueous acid has the effect of 'fine tuning' the surface and decreases the surface resistance to about less than 5 k-ohms, less than 1 k-ohms or less than about 0.5 k-ohms.
- 17. An electrode comprising a coated substrate wherein the coating of the coated substrate is an intrinsically conducting polymer (ICP) blend comprising PEDOT/PSS and a copolymer of vinylacetate and ethylene according to claim 1.

- 18. Use of an electrode according to claim 17 in dental apparatus for the detection of caries.
- 19. Use of an electrode according to claim 17 as a thin, intermediate layer between an anode and a light emitting layer of organic polymers wherein the PEDOT/PSS copolymer blends polarise the otherwise rough ITO surface for subsequent organic layer deposition and increase the anode work function, thus facilitating hole injection.
- 20. Use of an electrode according to claim 17 as a thin, intermediate layer between an anode of indium-tin oxide (ITO) and a light emitting layer of organic polymers wherein the PEDOT/PSS copolymer blends polarise the otherwise rough ITO surface for subsequent organic layer deposition and increase the anode work function, thus facilitating hole injection.